THYROID ABSCESS; THYROIDECTOMY; RECOVERY.[1]

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VASCULAR engorgement of the thyroid gland is often seen with menstruation, during pregnancy, and in young girls while the menstrual function is being established. In the latter the swelling is at times sufficient to constitute a form of acute goitre. Aside from the swelling and tenderness there are no evidences of inflammation. The normal thyroid gland, being enclosed in a firm capsule having no excretory duct and a low functional activity, is protected against the invasion of organisms unless introduced through the blood-supply. True inflammations of the normal thyroid gland are therefore rare. In the goitrous gland the disease is more common. Although cases have been recorded by Kerns, in 1839;[1] Massey, 1840;[2] Dixon, 1843;[3] Velpeau, 1847;[4] Wetzlar, in 1835;[5] and German writers later sporadically, it remained for Lebert to treat the subject in a clearer way by the report of cases in 1862.[6] All the cases occurred in goitrous subjects.

Abscess of the thyroid gland signifies an infection from without or within. Wounds of the gland, aspiration of cysts, interstitial injections with uncleaned instruments, or extension by contiguity of morbid processes from larynx or trachea are among the external sources of infection. Infection from within may occur during any of the acute infectious diseases. It has been observed after pneumonia, malaria, diphtheria, and relatively

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most often after typhoid fever. Nevertheless, in a record of 1700 cases of typhoid, Liebermeister found only fifteen instances of swelling of the thyroid. In the puerperal state suppurative thyroiditis may be the first and chief evidence of sepsis. As part of a pyæmic process, abscess of the thyroid has been often observed. Abscesses of rheumatic origin have also been described. They may occur during the height of the articular disease, precede or follow it.

The previous existence of goitre doubtless predisposes to abscess. Lebert saw all of his cases in Zurich, where goitre is endemic, but none in Breslau. Kocher[7] reports twenty-four cases of strumitis, in eleven of which aspiration, electrolysis, or interstitial injections had been made; of the remaining thirteen cases the predisposing causes already mentioned were found in six. Kocher directs attention to mild catarrhal affections of the alimentary canal as predisposing to strumitis. Suppurative thyroiditis is always of microbic origin. Eleven cases examined in this regard showed the presence of eight different forms of germs. Besides the ordinary pus forms found by Wölfler in 1889, the presence of the pneumococcus was demonstrated by Gerard and Marchant;[8] the bacterium communis coli by Brunner;[9] and the typhoid bacillus by Fauvel and Kummer.[10]

In the absence in this country of large numbers of goitrous subjects, abscesses of the thyroid are not often encountered. Cases have been recorded by Delafield, [11]Musser,[12] and Lydston.[13] The experience of every observer is limited, therefore I beg consent to report the following cases:

Case I.—Seen with Dr. Drury. Mrs. H., aged thirty-eight. Typhoid fever. No previous history of goitre. One week after convalescence there was a sudden rise of temperature to 103° F., accompanied by some pains in the throat, difficulty in breathing and swallowing. When seen there was present a uniform swelling of the left lobe of the thyroid, large as an orange, exquisitely tender to pressure, fluctuation distinct, skin not reddened. Aspiration removed several ounces of creamy pus, and markedly reduced the size of the swelling. Rapid filling up of sac. Further surgical intervention refused. After two weeks of severe suffering, spontaneous rupture,

and speedy cure. For a number of months considerable induration remained in the site of the abscess.

CASE II.—Miss H., aged twenty; of very nervous temperament; developed a parenchymatous goitre of the left lobe of the thyroid gland. Finding no relief from internal treatment and external applications, interstitial injections of ergotin were resorted to. While making one of the latter, in May, 1890; the needle of the syringe broke and remained embedded in the tumor. No immediate unpleasant results followed. The patient soon thereafter left the city for her summer vacation. During the next six months the patient was subjected to no further treatment. In the first months of 1891, the goitrous growth having made some progress, a neighboring physician made injections of Fowler's solution. I saw the patient again in November, 1891. She then presented an acutely inflamed thyroid gland. The tumor located on the left side was as large as a fist, and exquisitely tender to the touch. There was considerable dyspnœa and huskiness of voice and reflex cough, indicated implication of the recurrent laryngeal nerve. There had been several severe rigors; the pulse was rapid, and the temperature varied between 101° F. and 104° F. Patient somnolent and inclined to be cyanotic.

Operation November 7, 1891. Drs. Eichberg and Evans present. Incision three inches long over site of abscess, splitting of capsule with thermocautery, evacuation of about two ounces of pus, which at first was creamy, but from admixture of blood soon became dark. With the finger in the cavity a second abscess was readily located and opened by lacerating the gland-tissue with the finger. Notwithstanding most careful palpation, no trace of the needle could be found. Hæmorrhage from the abscess wall was very profuse. The thermocautery did not suffice to check it. It finally yielded to thorough packing of the cavity with sterilized gauze and closure of the wound with sutures.

So far as the general condition of the patient is concerned, for the time being she made an excellent recovery from the operation. The gauze packing was removed on the fourth day. Suppuration continued for a number of months, and apparently, under injections of peroxide of hydrogen, ceased altogether after two months. The closure of the wound was not permanent, however. Without severe general or local symptoms, reaccumulations ensued and discharged spontaneously three different times between January and June of 1892. When the patient left for the sea-shore a fistula discharging a drachm

of pus daily remained. On her return from the East in the fall, it was evident that the patient had not improved.

The thyroid was again as large as a fist. The fistulous opening had contracted until it only admitted the finest probe, and the patient was never without some elevation of temperature. During two months a number of quite severe hæmorrhages had occurred to further reduce the patient. There were also present unmistakable evidences of Graves's disease. Her pulse was always rapid, and cardiac palpitations were very frequently experienced. There were general muscular twitchings and marked tremulousness of the voice. Exophthalmus was not present, although consensual movements of the eyelid and globe were decidedly impaired.

Notwithstanding this feature of the case, it was determined, after consultation with Dr. Connor, that a speedy exitus from subacute sepsis could only be averted by extirpation of the left lobe of the thyroid gland.

Operation November 17, 1892. Incision six inches long, over axis of tumor, through skin and deep fascia. Exposure and ligation of superior thyroid artery. The separation of the gland from its bed necessitated the use of between sixty and seventy double ligatures of catgut for the smaller and silk for the larger vessels. Exposure and ligation of the inferior thyroid artery between two ligatures. With the left lobe loosened from its bed, a pedicle was made of the isthmus of the gland, and a stout ligature applied. Gauze drainage and suture completed the operation. So far as the wound was concerned, the patient made a recovery uninterrupted, save by the expulsion of four of the larger ligatures.

The wound had healed permanently two months after the operation. An examination of the specimen showed the presence of an hour-glass-shaped cavity lined with very vascular and exuberant granulations. As substratum to these was a dense layer of fibrous tissue, within which was embedded the hypodermic needle. It was found in the abscess wall, well removed from the cavity.

Eighteen months after the operation the condition of the patient is as follows: Firm linear scar at site of operation. Remaining portion of thyroid gland normal. General condition very much improved. There has been a gain of fifteen pounds in weight. The symptoms of Graves's disease, present before the operation, are still recognizable, but very much less pronounced. Under the thyroid extract they can be brought into almost complete abeyance.

The case presented is interesting in the tardy establishment of the suppurative process, which probably followed either the injections or the breaking off of the needle. For eighteen months after the last-named accident occurred no evidence of suppuration was discerned. The rapidity with which the presence of pus makes itself manifest varies within wide limits. In the acutest forms, agglutination of the overlying soft parts and perforation of the capsule occur in from two to three weeks. Sloughing of the gland from excess of intracapsular tension has been observed as early as the tenth day. Where the dosage of infection has been slight, as from the use of unclean instruments, months may pass before the abscess perforates its capsule. Such cases often assume from their inception a subacute or even chronic course. The rapidity with which pus is finally evacuated doubtless is modified by the depth of the abscess. Thyroid abscesses are generally limited to one lobe. They are single or multiple. In the latter cases, as in the one reported, intensely vascular gland-tissue is found between the foci. The tendency of thyroid abscesses is towards the integument. Retention of pus beneath the cervical fascia sometimes leads to fatal mediastinitis. Perforation into the trachea is not very rare; whereas rupture into the œsophagus is less often seen. In fulminating cases gangrene may develop with the retention of gases of decomposition. Although always of considerable gravity, thyroid abscesses are especially grave when they complicate puerperal infection, pyæmia, or diphtheria. When the suppuration develops in a goitre which, by its size and attachments, has compressed the trachea or larger blood-vessels, the increased pressure may speedily cause death. Other causes of death are acute sepsis, hæmorrhage, and exhaustion from prolonged suppuration. According to Lebert suppuration ensues in 60 per cent. of all cases of thyroiditis, and 25 per cent. of all cases are fatal. Modern methods of treatment have doubtless modified the mortality of suppurating cases, since among eighteen cases recorded since Lebert's publication, and in which the thyroid abscess was not part of a pyæmic process, only four ended in death.

Aside from pus absorption, the gravity of thyroid abscess

depends on hæmorrhages, and the exhaustion incident to prolonged suppuration. Grave and even fatal hæmorrhage may follow tapping and incision. By delaying incision until the abscess is quite superficial, and thereby reducing to a minimum the thyroid tissue to be divided, this source of danger can in a measure be eliminated; but not altogether. With the relief of tension given by the flow of pus, violent hæmorrhage is, as a rule, to be looked for. Fortunately, gauze packing suffices to check the flow, although probably from no other abscesses are recurrent hæmorrhages so common. Eder[14] reports a case in which incision was followed by profuse hæmorrhage, temporarily checked by the thermo-cautery. Reappearance of the hæmorrhage necessitated extirpation of the central portion of the gland. That injection into an opened thyroid abscess is fraught with danger, is shown by a case of Mosetig-Moorhof,[15] in which death within a minute followed the use of chloride of zinc.

In looking over the literature of thyroid abscesses, I have not been enabled to find an instance in which long-continued suppuration was relieved by extirpation of the part of the gland involved. Fortunately, the great majority of thyroid abscesses yield to incision, although a few cases are recorded in which discharging fistula remained for many months. Many cases are recorded in which the patient was still under treatment at the time of the report. As long ago as 1839, Kerns reported a case in which sloughing of the gland was followed by a permanent fistula which led towards the sublingual gland, and discharged only during mastication. It is more than probable that in this case the suppuration developed in the vertiges of the thyro-lingual duct. Fistula remaining after abscesses have likewise been recorded by Boucher[16] and Barling.[17] In the case of the last-named writer the abscess had also perforated into the pharynx.

A study of the cases reported of suppurative thyroiditis at my command shows that those which develop acutely, and in the wake of infectious diseases, run a more rapid course towards recovery or death than do those in which the suppuration presumably is the result of direct infection through surgical treatment of cystic

or parenchymatous goitres. The thickened cyst-wall collapses with difficulty after evacuation of its contents. That a discharging sinus occasionally remains is but to be expected. Where foreign bodies in the gland have provoked suppuration, it is but natural that a purulent discharge continues until their final expulsion.

A very interesting feature of the case presented is the relation of the goitre to Graves's disease, which, though ameliorated since the final operation, still exists. When first seen there were no evidences thereof other than the goitre. This was distinctly limited to the left lobe. After suppuration had greatly increased the size of the gland, and continued for many months, unmistakable evidences of morbus Basedowii supervened. Although, according to Marie, only one of the cardinal symptoms, like goitre, in combination with some of the nervous phenomena, tremor, insomnia, or hyperidrosis, may be sufficient to confirm the diagnosis, the goitre in the case described was unilateral, and not the uniform enlargement of the entire gland generally found. Until after the extirpation of the diseased half of the gland, the tachycardia, huskiness of voice, and tremor were considered the result of the mechanical irritation of the sympathetic and the recurrent nerves. It was believed to be a case of surgical as distinguished from the true morbus Basedowii, in which cardiac, ocular, and nervous symptoms are often developed out of all proportion to the size of the goitre. In the recent and admirable tabulation of Freiberg[18] on the surgical treatment of Graves's disease, in cases doubtless of surgical origin, the symptoms were relieved by surgical treatment of the goitre in nine out of ten cases. Of eleven cases of true morbus Basedowii, seven were reported cured by operation. In nine of the cases total or partial extirpation of the tumor was practised. Death did not result in any case from the operation. The fact that extirpation of the goitrous gland in morbus Basedowii is comparatively devoid of danger has been established. Not so, however, the certain curability of the disease by the operation. That many of the cases have been greatly improved cannot be questioned. In what proportion of cases permanent and absolute relief has

been brought cannot as yet be determined, since many of the cases were reported within from six weeks to six months of the operation. Only in a few cases, as in one of Riedel's (three years), has sufficient time elapsed since the operation to designate the result obtained as perfect and permanent.

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